## RaspberryPiã,'æ ¼å®‰SIMï¼‹USBé€šä¿¡ãƒ¢ã,¸ãƒ¥ãƒ¼ãƒ«ã•§é•‹ç"¨ã•™ã,‹ï¼ˆï¼'ï¼‰

**Category : ã,µãƒ¼ãƒ•ç®¡ç•†æ—¥è¨˜**
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ã€€RaspberryPiã,'USBé€šä¿¡ãƒ¢ã,¸ãƒ¥ãƒ¼ãƒ«ã•§ã,¹ã,¿ãƒ³ãƒ‰ã,¢ãƒ-ãƒ¼ãƒ³é•‹ç"¨ã••ã•›ã,‹ã€,
ã€€OSã•¯Raspibianã€,

**1.ä½¿ç"¨é€šä¿¡ãƒ¢ã,¸ãƒ¥ãƒ¼ãƒ«**

ã€€ãƒ»docomo L-02Aï¼ˆ3Gã€•HSDPAï¼‰
ã€€ãƒ»docomo L-05Aï¼ˆ3Gã€•HSDPA/HSUPAï¼‰
ã€€ãƒ»docomo L-02Cï¼ˆLTEï¼‰

ã•§ã•®å‹•ä½œã,'ç¢ºèª•æ¸ˆã•¿ã€,

ã€€ä¾¡æ ¼ã•§ä¸€ç•ªã•"ã•ªã,Œã•¦ã•„ã,‹ã•®ã•¯L-05Aã• ã,•ã•†ã•‹ã€,Amazonã•§ä¸-å•¤æ‰±ã•„ã•®ãƒ•ãƒ«ã,¯å"•ï¼ˆå®Ÿéš›ã•¯ã•»ã•¼æ–°å"•æœªä½¿ç"¨ï¼‰ã•Œ1,500å††ã••ã,‰ã•„ã• ã•£ã•Ÿã•®ã•§ã€,L-02Cã,„ã••ã•"ã••ã•"ã•®å€¤æ®µã•§LTEå¯¾å¿œã•ªç,¹ã•¯é-…åŠ›çš„ã• ã•Œã€•ã•¨ã•¦ã•¤ã,„ã•ªã•„åœ°é›·å"•ã•ªã•®ã•§ãƒ•ãƒ£ãƒ¬ãƒ³ã,¸ãƒ£ãƒ¼ä»¥å¤–ã•«ã•¯ã•Šã•™ã•™ã,•ã•—ã•ªã•„ã€,

**2.é€šä¿¡ãƒ¢ã,¸ãƒ¥ãƒ¼ãƒ«ã,'æŒ¿ã•™å‰•ã•®è¨-å®š**

1)å¿…è¦•ãƒ'ãƒƒãƒ±ãƒ¼ã,¸
ã€€ä°‹å‰•ã•«pppã€•screenã€•ejectã,'apt-get installã•§ã,¤ãƒ³ã,¹ãƒˆãƒ¼ãƒ«ã•—ã•¦ã•Šã••ã€,
ã€€æœ‰ç·šLANãƒ•ãƒ¼ãƒˆã•®ã•ªã•„RaspberryPi
A+ã•®å´ å•ˆã•¯ã€•ç„¡ç·šLANã,¢ãƒ€ãƒ—ã,¿ã,'å•–ã,Šä»˜ã•'ã•¦ã,¤ãƒ³ã,¹ãƒˆãƒ¼ãƒ«ã•™ã,‹ã€,

2)cdc_acmãƒ‰ãƒ©ã,¤ãƒ•ã•®ç„¡åŠ¹åŒ–
ã€€é€šä¿¡ãƒ¢ã,¸ãƒ¥ãƒ¼ãƒ«ã,'æŒ¿ã•™ã•¨ã€•ãƒ‡ãƒ•ã,©ãƒ«ãƒˆã•§ACMãƒ‰ãƒ©ã,¤ãƒ•ã•Œå„ªå…ˆã•—ã•¦è¹ã•¿è¾¼ã•¾ã,Œã•¦ã•—ã•¾ã•†ã•"ã•¨ã•Œã•,ã,‹ã•®ã•§ã€•ã•"ã,Œã,'å›žé•¿ã•™ã,‹ã€,ã•¡ã•ªã•¿ã•«L-02Aã•¯ACMãƒ‰ãƒ©ã,¤ãƒ•ã•§ã,„å‹•ä½œã•¯ã•™ã,‹ã•Œã€•Pingå€¤ã•ŒåŠ£æ,ªã•ªã•®ã•§ã€•æ€§è½ç„¡ã•«ã•¯ã€ŒACMãƒ‰ãƒ©ã,¤ãƒ•ã,'ä½¿ã,•ã•ªã•„ã€•æ–¹ã•Œæ-£è§£ã•¨æ€•ã,•ã,Œã,‹ã€,

**/etc/modprobe.d/cdc_acm-blacklist.conf**
ã€€blacklist cdc_acm

3)usbserialãƒ‰ãƒ©ã,¤ãƒ•ã•®æœ‰åŠ¹åŒ–
ã€€ä¸‹è¨˜ã,'èµ·å‹•ã,¹ã,¯ãƒªãƒﾌﾟﾄã•«ä»•è¾¼ã,•ã•°ã€•è‡ªå‹•ç„¡ã•«usbserialã•§å•„ãƒ¢ã,¸ãƒ¥ãƒ¼ãƒ«ã•Œä½¿ç"¨ã••ã,Œã,‹ã,ˆã•†ã•«ã•ªã,‹ã€,
ã€€ä½¿ç"¨æ©Ÿ¨®ã•«å¿œã•˜ã,³ãƒ¡ãƒ³ãƒˆã,¢ã,¦ãƒˆã€,

#For L-02A only
#sudo modprobe usbserial vendor=0x1004 product=0x6109

#For L-05A only
#sudo modprobe usbserial vendor=0x1004 product=0x6124

#For L-02C only
#sudo modprobe usbserial vendor=0x1004 product=0x618f

**3.é€šä¿¡ãƒ¢ã‚¸ãƒ¥ãƒ¼ãƒ«ã,'æŒ¿ã•—ã•Ÿç›´å¾Œã•®è¨-å®š**

ã€€å‰•è¿°ã•®é€šä¿¡ãƒ¢ã‚¸ãƒ¥ãƒ¼ãƒ«3ã•¤ã•¯å…¨ã•¦ã€ŒæŒ¿ã•™ã•¨æœ€åˆ•ã€•CD-ROMã•¨ã•—ã•¦è ª•è-˜ã••ã‚Œã‚‹ã€•ãƒ‡ãƒ•ã‚¤ã‚¹ã‚'ï¼ˆUSB Composite Deviceï¼‰ã•§ã•‚ã‚Šã€•ã•„ã‚•ã‚†ã‚‹ã€Œã‚¼ãƒ-ã‚¤ãƒ³ãƒˆãƒ¼ãƒ«æ©Ÿè½ã€•ã‚'å‚™ã•ˆã•¦ã•„ã‚‹ã€ä»®æƒ³CD-ROMã•‹ã‚‰ãƒ‡ãƒ•ã‚¤ã‚¹ãƒ‰ãƒ©ã‚¤ãƒ•ã‚'è ª-ã•¿å‡ºã••ã•›ã‚‹â€¦â€¦ã•¨ã•„ã•†ã€• **Windows/MacOSã•®ã•Ÿã,•ã•®æ©Ÿè½ã€,**Linuxã• ã•¨å,•è¿·æƒ'ã•ª ã•'ã•§ ã••ã•®ã•¾ã•¾ã•§ã•¯é€šä¿¡ãƒ‡ãƒ•ã‚¤ã‚¹ã•¨ã•—ã•¦ã•¯è ª•è-˜ã••ã‚Œã•ª ã•„ã•®ã•§ã€•

ã€€ãƒ»CD-ROMç›¸å½"ã•®/dev/sr0ã•‹/dev/sg0ã,'ejectã•™ã,‹ ã€€ãƒ»ã€Œusb_modeswitchã€•ã•§ejectã,'è‡ªå‹•å‡¦ç•†ã••ã•›ã,‹

ã•®ã•Œãƒˆãƒ¬ãƒ³ãƒ‰ã• ã•Œã€•**å®Ÿã•¯ã•©ã•¡ã,‰ã,,ä¸•è¦•ã€**ç•†ç"±ã•¯

ã€€ãƒ»screenã,³ãƒžãƒ³ãƒ‰ã•§/dev/ttyUSBxï¼ˆxã•¯pppdã•§ä½¿ã•†ãƒ•ãƒ¼ãƒˆç•ªå•·ï¼‰ã•«ç¹‹ã•Žã €•ã€ŒAT%USBMODEM=0ã€•ã,'å®Ÿè¡Œã•™ã,‹

ã•§ã€•æ•'ä¹…çš„ã•«ã€ŒUSBãƒ¢ãƒ‡ãƒ ã•¨ã•—ã•¦æœ€åˆ•ã•‹ã,‰è ª•è-˜ã••ã‚Œã‚‹ã€•ã‚ˆã•†ã•«ã•§ã••ã, ‹ã•‹ã,‰ã€,è©³ç´°ã•¯ã•"ã•¡ã,‰å•,ç…§ã€,

**4.pppdè¨-å®š**

ã€€ä½¿ç"¨ã•™ã,‹OSã•¯Raspibianã• ã•Œã€•ãƒ€ã,¤ãƒ¤ãƒ«ã,¢ãƒƒãƒ—è¨-å®šï¼ˆpppdï¼‰ã•¯ ArchLinuxARMã•®ã„ã•®ã•Œå…±é€šã•§ä½¿ã•ˆã,‹ã€, ã€€ä¸‹è¨˜ä¾‹ã•§ã•¯IIJmioä½¿ç"¨ã•®è¨-å®šã•®ã•Ÿã,•ã€•ä»–MVNOã•®å´å•ˆã•¯é•©å®œä¿®æ-£ã,'ã€,

**/etc/ppp/options-mobile**
ã€€ttyUSB2ã€€ã€€921600
ã€€lock
ã€€crtscts
ã€€modem
ã€€passive
ã€€novj
ã€€defaultroute
ã€€noipdefault
ã€€usepeerdns
ã€€noauth
ã€€hide-password
ã€€persist
ã€€holdoff 10
ã€€maxfail 0

ã€€debug

**/etc/ppp/peers/provider**
ã€€file /etc/ppp/options-mobile
ã€€user "mio@iij"
ã€€password "iij"
ã€€connect "/usr/sbin/chat -v -t15 -f /etc/ppp/chatscripts/mobile-modem.chat"

**/etc/ppp/chatscripts/mobile-modem.chat**
ã€€ABORT 'NO CARRIER'
ã€€ABORT 'VOICE'
ã€€ABORT 'NO DIALTONE'
ã€€ABORT 'NO DIAL TONE'
ã€€ABORT 'NO ANSWER'
ã€€ABORT 'DELAYED'
ã€€REPORT CONNECT
ã€€TIMEOUT 6
ã€€'' 'ATQ0'
ã€€'OK-AT-OK' 'ATZ'
ã€€'OK' 'ATZ'
ã€€'OK' 'ATH'
ã€€TIMEOUT 3
ã€€'OK' @/etc/ppp/chatscripts/pin
ã€€'OKd-AT-OK' 'ATI'
ã€€'OK' 'ATZ'
ã€€'OK' 'ATH'
ã€€'OK' 'ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0'
#3Gãƒ¢ã‚¸ãƒ¥ãƒ¼ãƒ«ã•®å´å•ˆã•¯ã€Œ+FCLASS=0ã€•ã‚'å‰Šé™¤ï¼ˆã‚¨ãƒ©ãƒ¼ã•«ã•ªã‚‹ï¼‰
ã€€'OK' @/etc/ppp/chatscripts/mode
ã€€'OK-AT-OK' @/etc/ppp/chatscripts/apn
ã€€'OK' 'ATD*99***1#'
ã€€TIMEOUT 30
ã€€CONNECT ''

**/etc/ppp/chatscripts/apn**
ã€€AT+CGDCONT=1,"IP","iijmio.jp"

**/etc/ppp/chatscripts/mode**
ã€€AT

**/etc/ppp/chatscripts/pinï¼�â€»PINæœªè¨-å®šã•®å´å•ˆï¼‰**
ã€€AT
ã€€â†'PINè¨-å®šæ¸ˆã•¿ã•®å´å•ˆã•¯ã€•å‰•è¿°ã•®ArchLinuxARMã•®Webã‚µã‚¤ãƒˆã•§ç¢ºèªã•®ã•“ã•¨ã€‚

ã€€ã•¡ã•ªã•¿ã•«ã•“ã•®ã‚¹ã‚¯ãƒªãƒﾟãƒˆä¸€å¼•ã‚'ä½¿ã•†ã•¨ã€•ãƒ€ã‚¤ãƒ¤ãƒ«ã‚¢ãƒƒãƒﾟãƒ—å‡æ–-æ™‚ã•®å†•æŽ¥ç¶šã‚‚è‡ªå‹•ã•§ã‚„ã•£ã•¦ã••ã‚Œã‚‹ã•®ã•§ã€•é€šä¿¡æ–-ã‚'æ¤œçŸ¥ã•—ã•¦å†•æŽ¥ç¶šã‚³ãƒžãƒ³ãƒ‰ã‚'â€¦â€¦ã•¨ã•„ã•£ã•Ÿå^¥è¨-å®šã•Œä¸€å^‡ä¸•è¦•ã•§ã€•æ¥½ã•§ã•‚ã‚‹ã€‚

**5.èµ·å‹•ç›´å¾Œã•®è‡ªå‹•æŽ¥ç¶š**

ã€€èµ·å‹•ã,¹ã,¯ãƒªãƒ—ãƒˆã•§ã€Œ/usr/bin/sudo /usr/bin/ponã€•ã,'å®Ÿè¡Œã•™ã,‹ã• ã•'ã€,ponã,³ãƒžãƒ³ãƒ‰ã•¯å‰•è¿°ã•®ã€Œ/etc/ppp/peers/providerã€•ã•Œãƒ‡ãƒ•ã,©ãƒ«ãƒˆã•®å®Ÿè¡Œã,¿ãƒ¼ã,²ãƒƒãƒˆã•®ã•Ÿã,•ã€•æœªæŒ‡å®šã•®å´å•ˆã•¯providerã•Œå®Ÿè¡Œã••ã,Œã,‹ã€,OpenVPNã•ªã,"ã•‹ã•¯ã,µãƒ¼ãƒ"ã,¹èµ·å‹•ã•—ã•¦ã•Šã•'ã•°ç‰¹ã•«è¿½åŠ è¨-å®šã•ªã••ã€•ãƒ€ã,¤ãƒ¤ãƒ«ã,¢ãƒƒãƒ—å®Ÿè¡Œã•§è‡ªå‹•çš„ã•«ã••ã•¡ã,‰ã„ç¹‹ã•Œã,‹ã€,

ã€€L-02Aã•¨L-05Aã•«ã•¤ã•„ã•¦ã•¯ã•"ã,Œã•§OKã€,
ã€€L-02Cã•«ã•¤ã•„ã•¦ã•**¯ã•¨ã•¦ã•¤ã„ã•ªã•„ä¸•å…·å•ˆã•Œã•‚ã‚‹**ã•®ã•§ã€•ã••ã•¡ã,‰ã•¯å^¥ã,¨ãƒ³ãƒˆãƒª å•,ç…§ã€,